

## CLAIMS

What is claimed is:

- 1 1. A material processing system comprising:  
2 a preheating station to heat a powdered material to a predetermined temperature,  
3 the predetermined temperature being below the melting point of the powdered material;  
4 and  
5 a processing station to process the preheated powdered material, the preheated  
6 powdered material facilitating at least one of improved cycle time of the processing  
7 station, improved quality of a finished product, and decreased operation cost of the  
8 processing station.
- 1 2. The material processing system of claim 1, wherein the processing station is a  
2 rotomolding station.
- 1 3. The material processing system of claim 1, wherein the processing station is an  
2 extrusion station.
- 1 4. The material processing system of claim 1, wherein the processing station is a  
2 molding station.
- 1 5. The material processing system of claim 1, wherein the powdered material is  
2 plastic.
- 1 6. The material processing system of claim 1, wherein the powdered material is  
2 metal.
- 1 7. A powder preheating system comprising:

2 a first heated tube having an auger screw for moving a powdered material through  
3 the first heated tube while heating the powdered material to a predetermined temperature;  
4 and

5 a hopper coupled to the first heated tube and staged for dispensing the heated  
6 powdered material.

1 8. The powder preheating system of claim 7, further comprising a second heated  
2 tube coupled to the first heated tube to facilitate recirculating the powdered material  
3 between the first and second heated tubes.

1 9. The powder preheating system of claim 8, wherein the first and second heated  
2 tubes are heated via first and second water jackets having heated water flowing  
3 therethrough, the first and second water jackets substantially surrounding a circumference  
4 of the first and second heated tubes.

1 10. The powder preheating system of claim 9, wherein the first and second water  
2 jackets are baffled to facilitate even distribution of the water around the circumference of  
3 the first and second heated tubes.

1 11. The powder preheating system of claim 8, further comprising a third tube coupled  
2 to the first and second heated tubes to store the powdered material.

1 12. The powder preheating system of claim 11, wherein the first, second, and third  
2 tubes are coupled via a horizontal auger screw, the horizontal auger screw employed to  
3 move the powdered material between the first, second, and third tubes.

1 13. The powder preheating system of claim 12, wherein the horizontal auger screw  
2 includes a flight restrictor on a portion of the horizontal auger screw to control an amount  
3 of powdered material moving between the first, second, and third tubes.

1 14. The powder preheating system of claim 11, further comprising a normally closed  
2 gate coupled to a bottom portion of the third tube.

1 15. The powder preheating system of claim 11, wherein the third tube is heated via a  
2 water jacket substantially surrounding the third tube.

1 16. The powder preheating system of claim 11, further comprising a vacuum  
2 conveyor coupled to a top portion of the third tube to draw the powdered material from a  
3 storage container into the third tube.

1 17. The powder preheating system of claim 11, further comprising a sensor located in  
2 the third tube to sense when the powdered material is at or below a predetermined level.

1 18. The powder preheating system of claim 8, further comprising a sensor located in  
2 at least one of the first and second heated tubes to sense when the powdered material is at  
3 or below a predetermined level.

1 19. The powder preheating system of claim 7, further comprising a vibration chute  
2 coupled to the hopper to facilitate flow of the powdered material from the hopper.

1 20. The powder preheating system of claim 7, further comprising a first scale to  
2 measure an amount of powder to be colored.

1 21. The powder preheating system of claim 20, further comprising a second scale to  
2 measure an amount of powdered material dispensed from the hopper.

1 22. The powder preheating system of claim 7, further comprising a scale to measure  
2 an amount of powdered material dispensed from the hopper.

1 23. The powder preheating system of claim 7, further comprising a mixer to mix a  
2 pigment with the powdered material.

1 24. The powder preheating system of claim 23, further comprising a pigment  
2 receptacle to meter an amount of pigment into the mixer.

1 25. The powder preheating system of claim 7, wherein a portable electronic device is  
2 employed to operate the system.

1 26. A powder preheating system comprising:  
2 at least one heated tube for heating powdered material flowing through the tube;  
3 means for feeding the powdered material from a storage bin to the at least one  
4 heated tube; and  
5 means for dispensing the heated powdered material from the at least one heated  
6 tube.

1 27. The powder preheating system of claim 26, further comprising means for coloring  
2 the powdered material.

1 28. A control system for a vibratory feeder comprising:  
2 a USB hub;  
3 at least one serial board coupled to the USB hub, the serial board operable to  
4 provide communication with a scale; and  
5 a DIO board coupled to the USB hub and operable to control at least one vibrator.